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ABSTRACT

Ten diagrams and step-by-step instructions for an art activity in which middle school students practice drawing in perspective are provided. Students practice basic rules of perspective such as (1) determining the horizon line or disappearing point, (2) drawing parallel lines and drawing above and below eye level. A brief test of teacher effectiveness and student comprehension conclude the activity. This document is one of a series of materials from the Iowa Area Education Agency 7 Teacher Center project. (LP)

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DRAWINGS FROM SPACE

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SØ 015 281

MATERIALS NEEDED: White paper 9 x 12/12 x 18, straight edges, pencils.

In order to learn the "how to" of drawing in space, the student must first understand some basic rules of perspective: 1) Horizon line or disappearing point (Fig. W), 2) Parallel lines (Fig. X), 3) Above and below eye level (Fig. Y). The student also needs to be made aware of how solid shapes appear when one shape is viewed in front of another, as they go back into space (Fig. Z).

Step One: Students will take a sheet of paper and establish a central dot or disappearing point. Then, they will draw a series of 4-8 squares around this point. Next, the students will connect all possible outside corners of the squares to the disappearing point, without passing through any of the front surfaces of the squares (Fig. A).

Students will then take another sheet of paper, establish a disappearing point, and draw various combinations of rectangles, circles, half-circles, inside-outside curves, plus an alphabet letter drawn in "block" style. These shapes will be drawn around the disappearing point (Fig. B).

After this, the students will draw all possible outside edge lines to the disappearing point, using the same rules as before--remembering not to pass any line through any other shapes . . . . Shapes to the front take precedence over ones further back. Upon completion of this, discuss parallel lines and how they apply when viewing the front and back lines of a box and cylinder. If possible, demonstrate with 3-D examples as to how the back lines are parallel to the front.

Next, the student is ready to "shorten-up" his disappearing shapes: First the squares from Fig. A (refer to Fig. C), and then, the shapes of Fig. B (refer to Fig. D).

Upon reaching this point, the students are ready to draw complex spacecraft shapes. First, an understanding of the term symmetrical must be established: what happens to the right of center also happens to the left. Also, an understanding of how symmetrical applies to the balance of a flying craft must be established (Refer to Fig. E-1 and note that Fig. E-1 is merely a combination of squares, rectangles, and inside and outside curves put together to form a more complex solid shape).

It should be pointed out that the far ends of this newly drawn shape should take on a wing-like appearance. If a more complex craft is desired, the student should include unattached satelite shapes (Fig. E-2). Next, the placement of the disappearing point above; below; right; left or directly on-center of the complex shape.

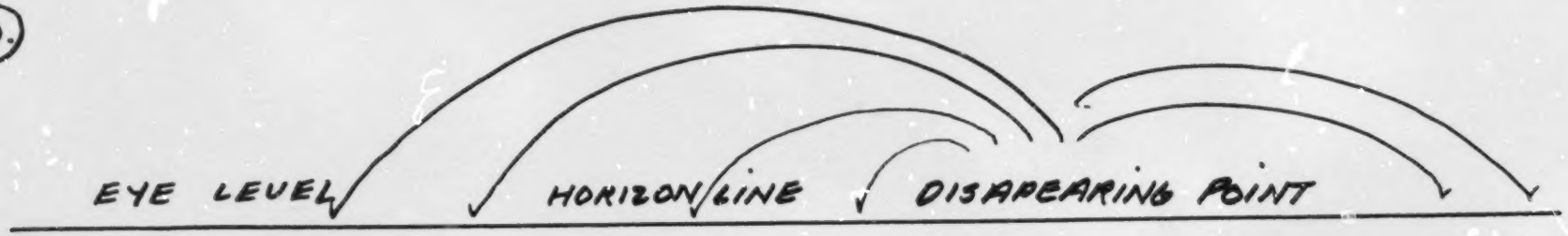
In conclusion, the student will take all possible outside and inside corners back to the disappearing point (Fig. F) and, then, shorten up the shape with lines parallel to the front (Fig. G & H).

Further creativity with this drawing is limited only by the imagination and mastery of the above skills by the student. The cover sheet illustration could be used as an example of just a few of the possibilities of this project.

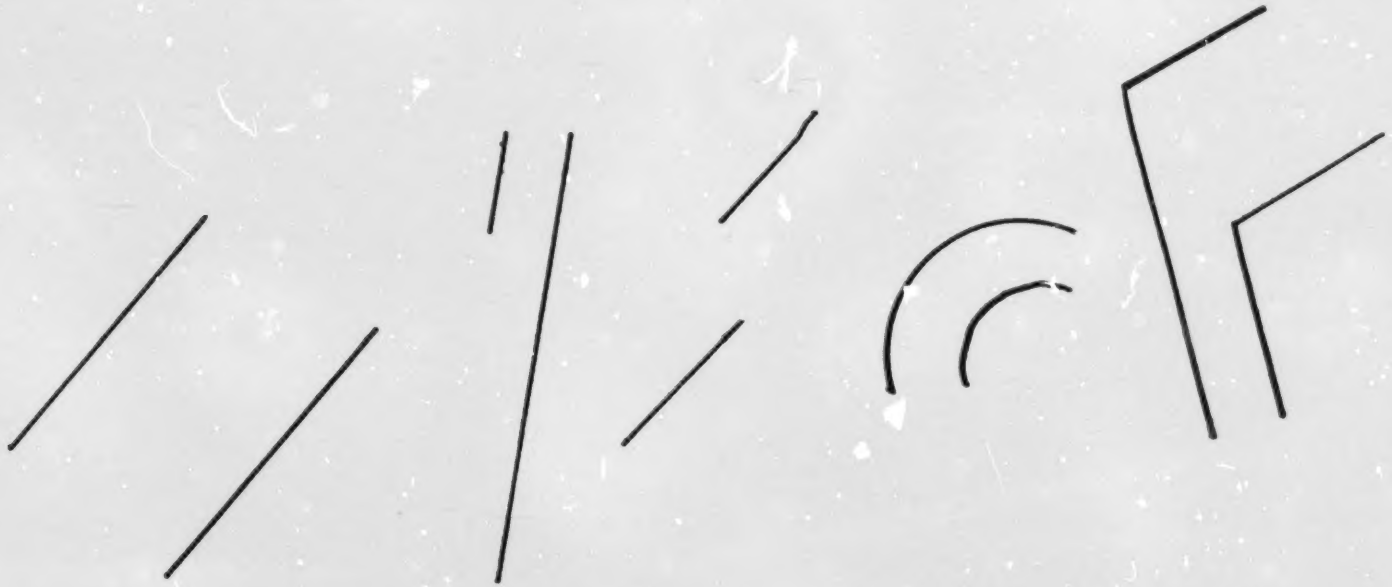
TEST (of teacher effectiveness and student comprehension)

Dictate: Take a sheet of paper and place your name in the top right hand corner. Then, establish a disappearing point somewhere near the center of the paper. Next, draw a square or rectangle below eye level and to the left. Following this, take this shape back to the disappearing point and then shorten it up with parallel lines.

(w.)

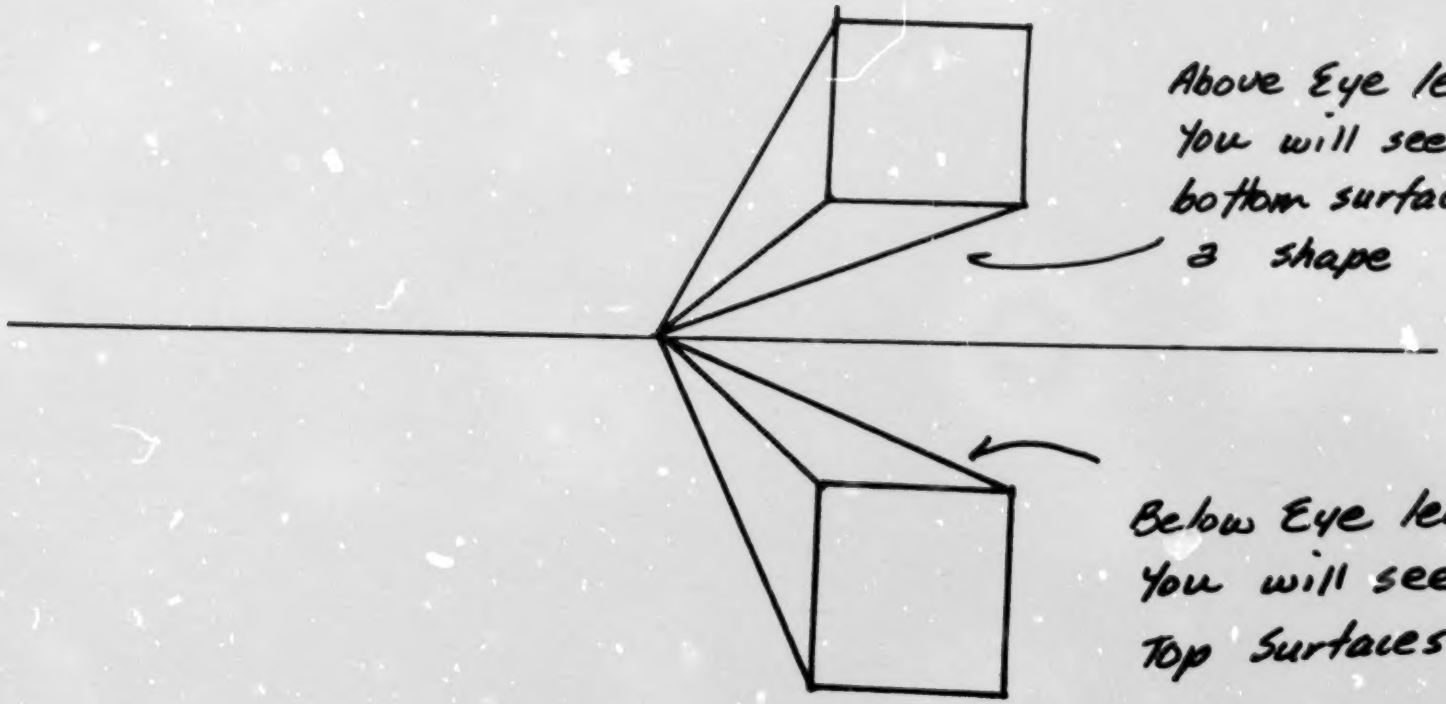


(x.)

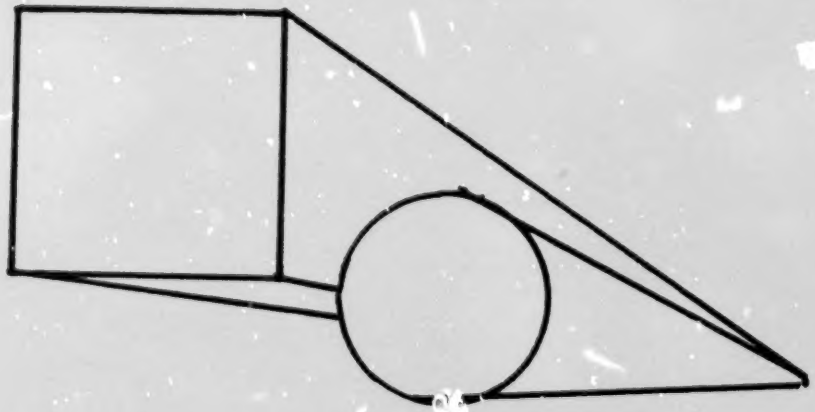


PARALLEL LINES

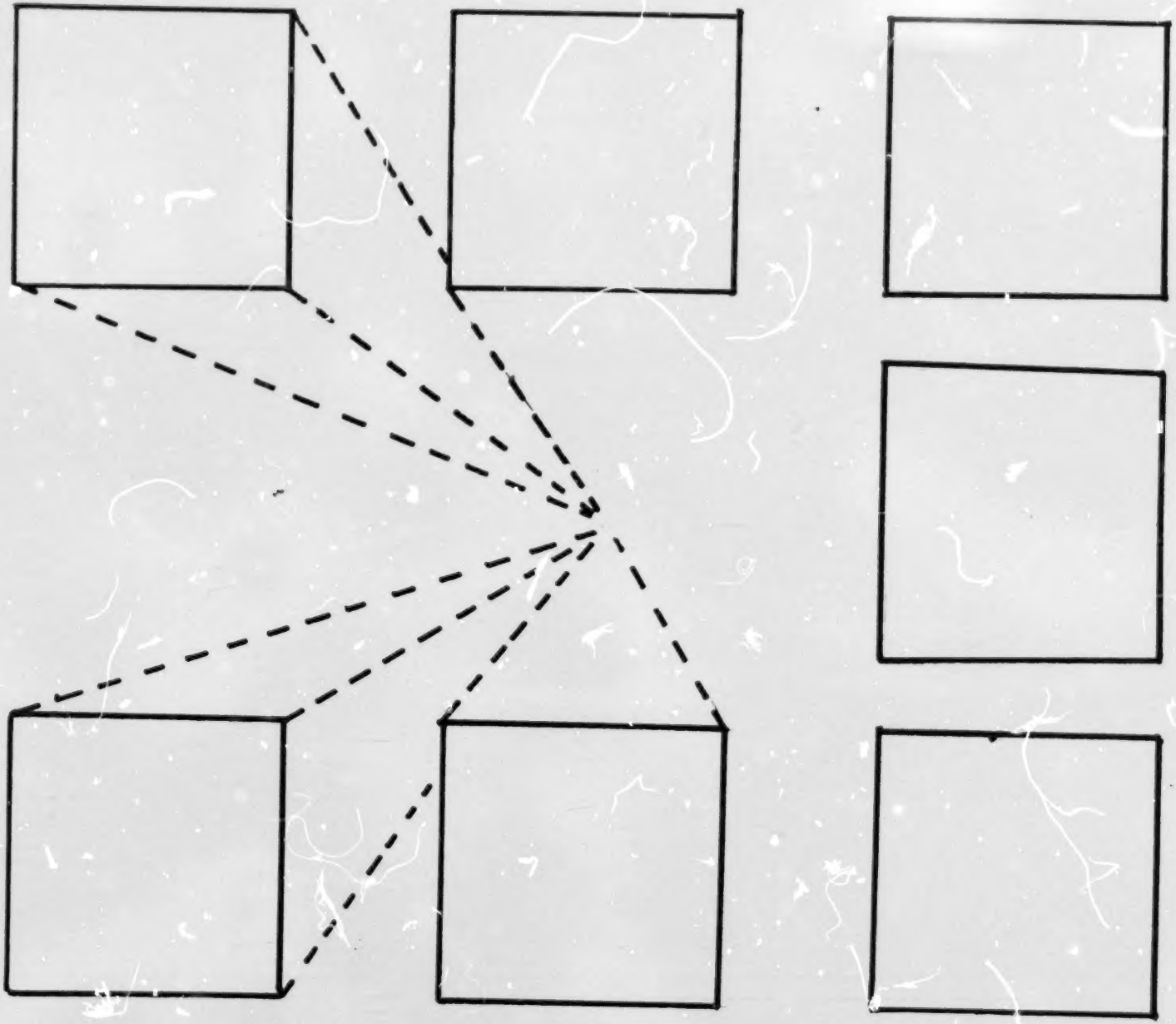
4.


Above Eye level
You will see the
bottom surface of
a shape
Below Eye level
You will see the
Top Surfaces

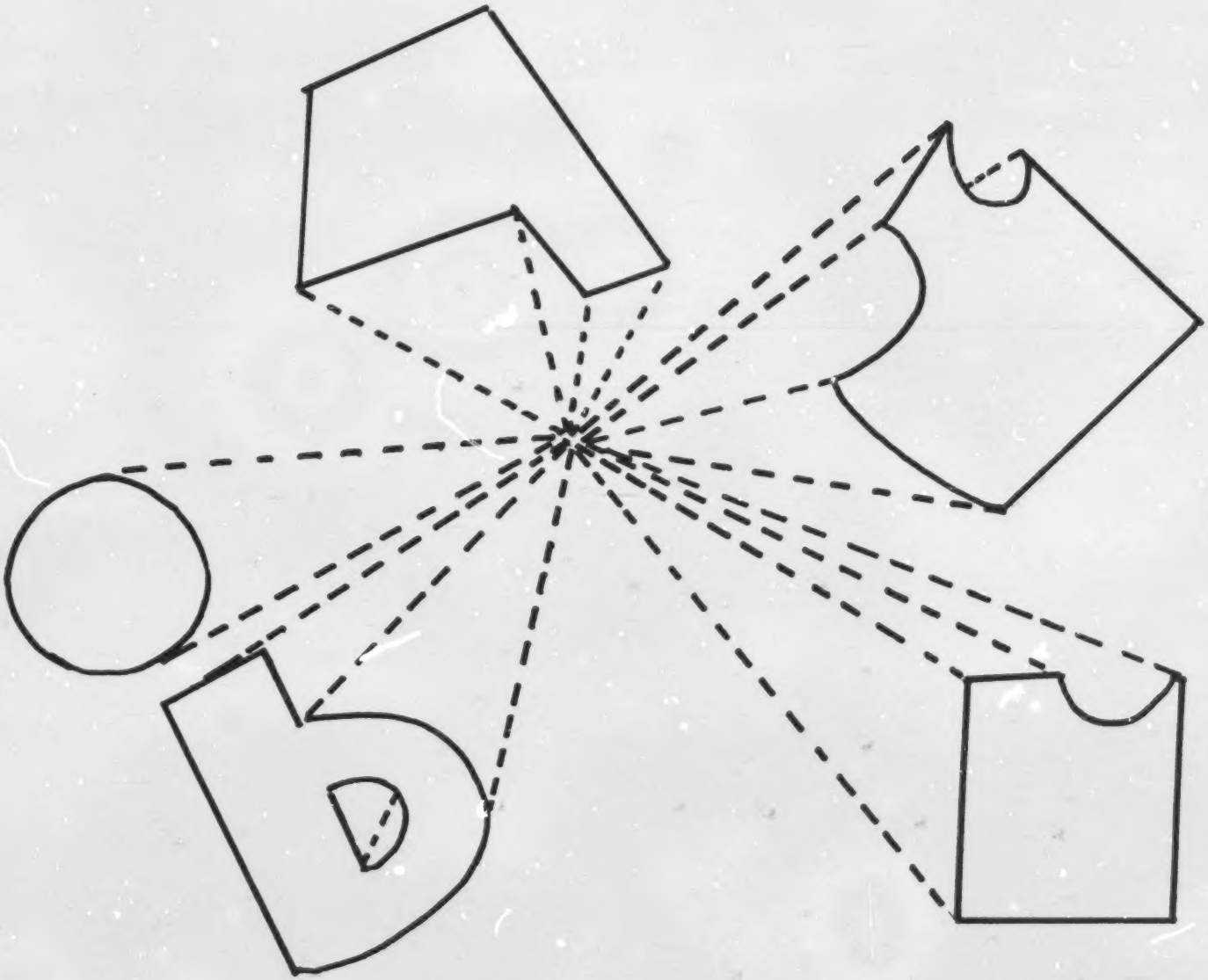
2.



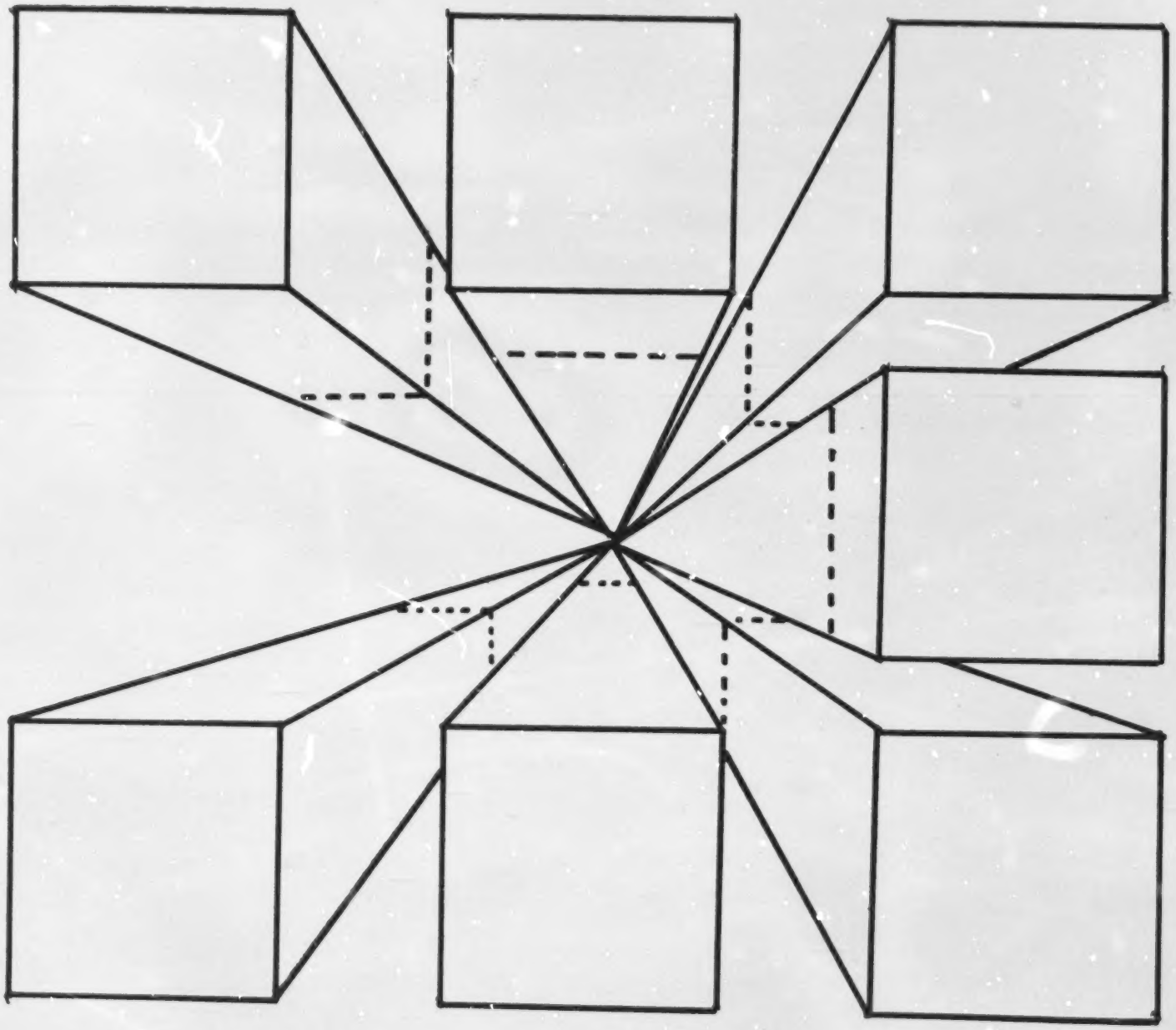
A.



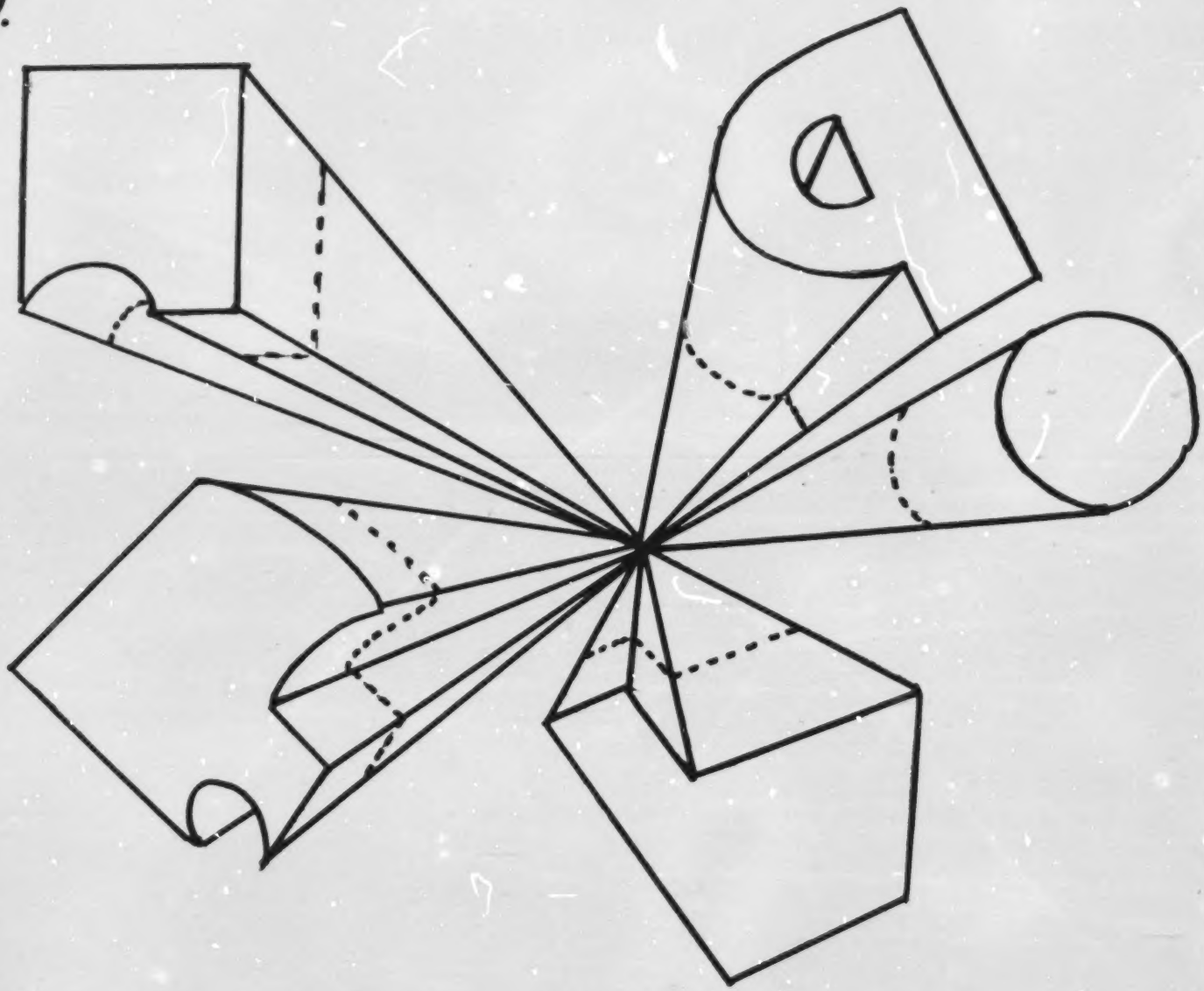
B.



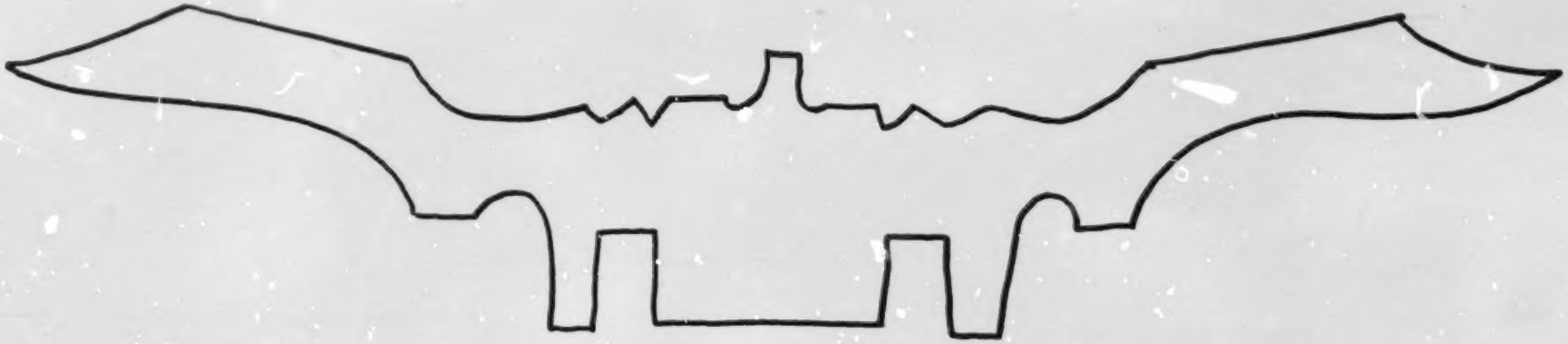
C.
A.



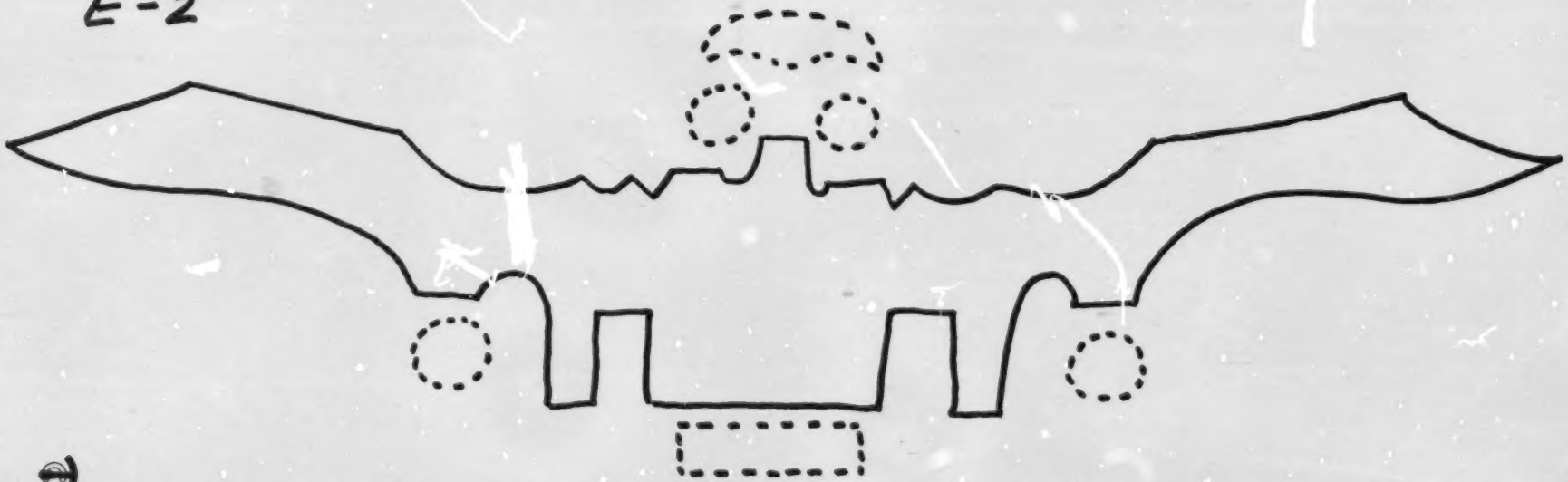
D.



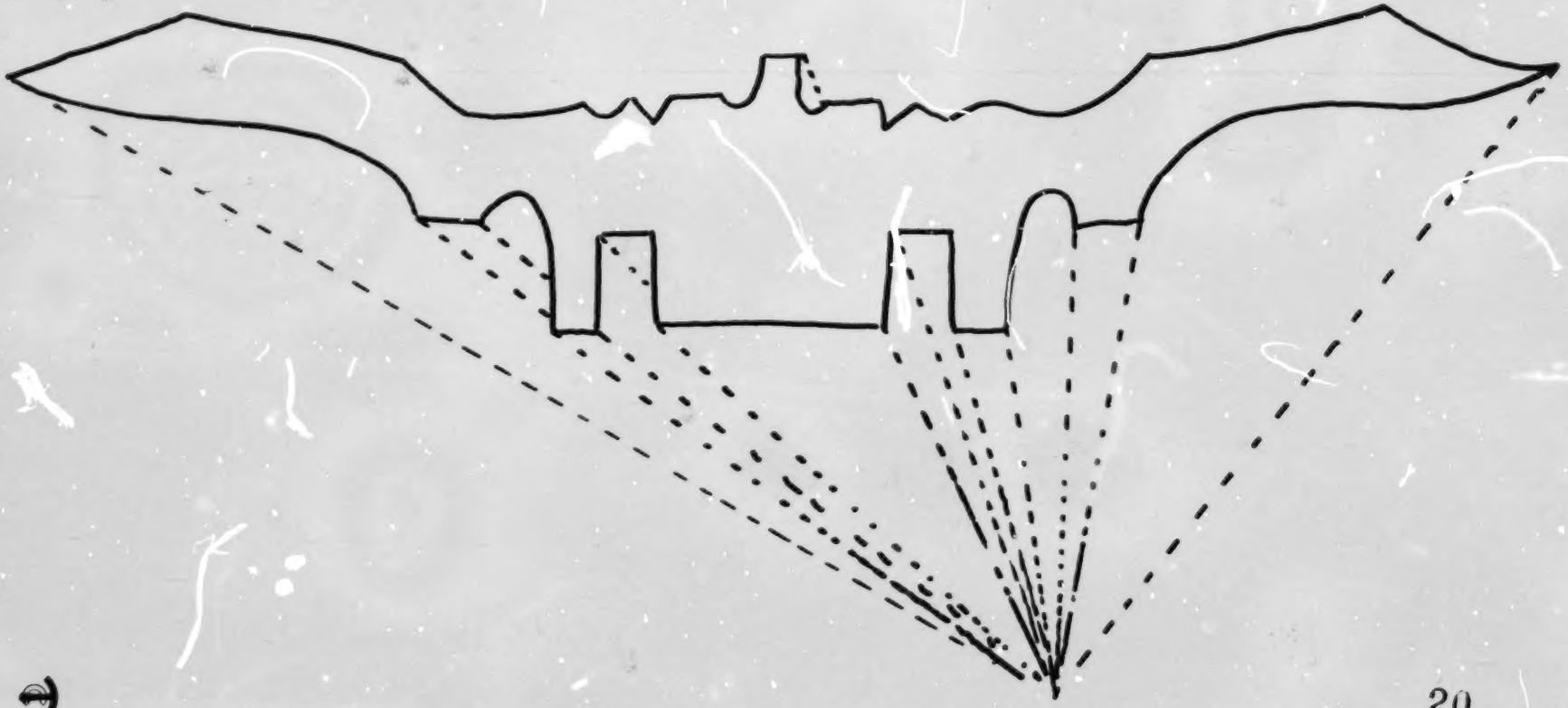
E-1



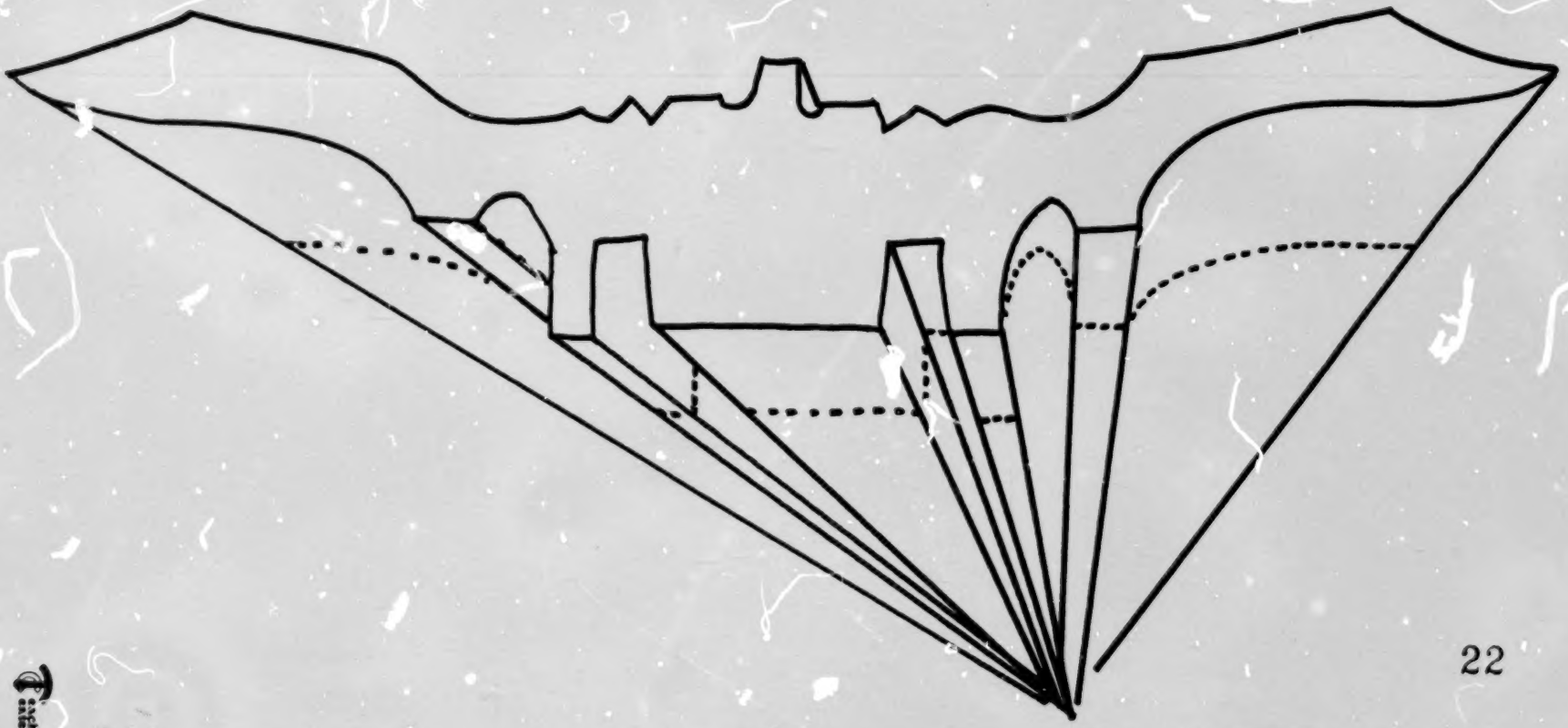
E-2



F.



G.



H.